

Application Serial No. 10/033,182  
Art Unit 3673 (Attorney Dkt: HALB:031)

**REMARKS/ARGUMENTS****I. General Remarks**

Please consider the application in view of the following remarks:

**II. Disposition of Claims**

Claims 1-24 and 26 are pending in this application. However, claims 1-13 are withdrawn.

In this Response, claims 16, 17, 19, 21, and 24 are cancelled. Claim 27 is submitted new. Claims 14, 15, 18, 20, 22 and 26 are amended.

The Examiner's objections to and rejections of claims 16, 17, 19, 21, and 24 are addressed insofar as they may apply to amended claims 15 and 18.

**III. Rejection of Claims under 35 U.S.C. § 112**

The Examiner has rejected claim 14 under 35 U.S.C. 112, second paragraph, "as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." Specifically, the Examiner has noted that claim 14 calls for "a synergistic blend" and "Applicant has failed to define what range of concentrations is encompassed by 'synergistic.'"

Applicant respectfully traverses this rejection. Applicant explains in the specification that the performance reflected in Table I "reflects a surprising synergy in the combination [of the invention] over and above the performance of either material alone." Applicant further indicates a preferred range of the components of the combination. Specifically, (as stated in Applicant's application published as U.S. Publication No. 20030132000 on July 17, 2003, emphasis added):

[0017] As the data in Table I shows, enhanced reduction in filtrate (indicating good performance as a lost circulation material) is seen with the combination over and above the performance of either material alone. The performance reflects a surprising synergy in the combination that is not suggested by or apparent from just combining the performance of either material used alone.

...

[0019] In the composition of the invention, the most preferred quantity of STEELSEAL.TM. to DIAMOND SEAL.TM. is about 90:10 although ranges of STEELSEAL.TM. of about 70 pounds per barrel (ppb) to about 90 ppb and of DIAMOND SEAL.TM. of about 2 ppb to about 10 ppb are also preferred. The

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composition of the invention may be used in, added to, or blended in any water or aqueous based drilling fluid or mud, including for example brines and aqueous fluids comprising salts as well as fresh water.

Applicant respectfully submits that these statements in the specification define the range of concentrations encompassed by "synergistic" sufficiently to satisfy the requirements of 35 U.S.C. 112. Applicant has amended claim 14 to specifically incorporate the range set forth in this paragraph 19 of the application.

#### IV. Rejection of Claims under 35 U.S.C. § 103--Zaleski

The Examiner has rejected claims 14-19, 21-24, and 26 under 35 U.S.C. 103(a) as unpatentable over Zaleski et al (U.S. Patent No. 5,826,669) in view of Diamond Seal™. Applicant respectfully traverses these rejections for the reasons discussed below.

Specifically, the Examiner has stated that Zaleski teaches treating a wellbore with a fluid including a carbon based material to prevent or alleviate lost circulation but that Zaleski fails to teach the polymer. However, the Examiner has stated that Diamond Seal™ is a water swellable but not water soluble crystalline synthetic polymer disclosed as useful in preventing lost circulation. In the Examiner's view, "It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Zaleski process to have included a water swellable but not water soluble crystalline synthetic polymer as called for in claim 14" or in claims 15 or 18. Citing *In re Kerkhoven*, the Examiner states, "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose." However, in *In re Kerkhoven*, appellant's attorney admitted that appellant had not run any tests comparing his multi-slurry-produced detergent compositions containing a builder with the prior art single-slurry-produced detergent compositions containing the builder. Thus, it was said that appellant had failed to prove the superiority of his multi-slurry technique over the prior art's single-slurry technique for the production of detergent compositions containing this builder.

In the application currently before the Examiner, Applicant provided test data in Table 1 showing the superiority of Applicant's combination. Applicant's invention is not a mere combining of two known compositions for the same purpose. Applicant's invention shows superior performance with the combination and furthermore the superior effect of such combination without the need for adding other elements or materials such as silicate or bentonite

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for reinforcement as used in the prior art when the individual components of the combination were used separately or one without the other.

The Examiner, however, has commented on page 7 of the office action that he has not been persuaded by this Table and he has asserted that one skilled in the art would expect the cumulative resistance to flow to be "greater than each of the two individually" and then he has explained that one skilled in the art would not expect "an additive result between the individual results." However, a result between the two individual results is NOT what Applicant said or intended to say. Applicant respectfully submits that Table I shows Applicant's invention to yield synergistically superior, better than expected, results. That is, the results with Applicant's invention are better than merely the results of the components added together. Applicant respectfully submits that one skilled in the art may typically expect a sum—the results of the individual components added together. *Foseco International Limited v. Chemincon, Inc.*, 507 F. Supp. 1253, 210 U.S.P.Q. 697, 708 (Mich. 1981) ("Courts have roughly defined synergism as when the 'whole in some way exceeds the sum of its parts,' . . ."). Applicant respectfully submits again that the expected improvement would not be as great as the results that Applicant surprisingly found and reported in Table I. The Examiner has not cited any support for his position that Applicant's results would be expected by one skilled in the art.

Due to the press of time commitments for other matters, the Assignee of the invention has not had time to run further comparative tests but hopes to do so in the next few weeks. However, the undersigned submits that the filtrate data in the table for treatments wherein both STEELSEAL™ and DIAMOND SEAL™ components were used was better than any "additive" effect and such further tests should not be needed.

Also on page 7 of the office action, the Examiner has questioned an "assumption" that Zaleski uses bentonite. In explanation, he has questioned how the results of the "BLANK" run can be explained in Zaleski, but the undersigned counsel does not understand this question. When Zaleski discusses the composition of the drilling fluids used in the reported tests in that patent, the undersigned counsel believes the composition indicates presence of bentonite. Zaleski is not believed to specifically teach or suggest drilling fluids without bentonite.

In any case, the fact that Applicant's invention is successful without bentonite is believed to relate more to the advantages and uniqueness of the invention than to what makes the invention effective in preventing or alleviating lost circulation. The Examiner focuses on the

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fact that Zaleski teaches that graphitic carbon material can be used to reduce loss in circulation and that DIAMOND SEAL™ is a polymer also useful in reducing lost circulation and has thus adamantly concluded that combining the two for the purpose of reducing lost circulation would be obvious. However, the Examiner's conclusion fails to credit Applicant with the contribution that his invention makes to the art. Applicant has shown that the combination is not only effective, but more effective than an additive amount. And furthermore, Applicant has shown that the combination can actually be made and be further facilitated with alcohol. Certainly just any two items that may be used for the same thing will not necessarily be effective when combined in a subterranean formation, and yet the Examiner's position seems to so contend.

Applicant amended claim 15 to incorporate the elements of claims 16 and 17 and canceled claims 16 and 17 to avoid redundancy, rendering the Examiner's rejection of claims 16 and 17 moot.

With respect to claim 19, the Examiner has noted that while the DIAMOND SEAL™ document fails to disclose the crosslinked polymer, the polyacrylamide sold as DIAMOND SEAL™ is crosslinked. Even if this is the case, Applicant respectfully submits that neither this reference nor the commercial product teaches or suggests Applicant's synergistic combination with resilient carbon based material.

Applicant has incorporated the elements of claim 19 in amended claim 18 and has canceled claim 19 to avoid duplicity, rendering the Examiner's rejection of claim 19 moot.

With respect to claim 21, the Examiner has noted that "Official Notice is taken that the use of weighting material is well-known and near universal in drilling fluids, in order to achieve proper density." Thus, the Examiner has said it would have been obvious to one of ordinary skill in the art to have further modified the Zaleski process to have included weighting material as called for in claim 21. Applicant respectfully traverses the Examiner's rejection because claim 21 depends from claim 18 which Applicant maintains is novel and unobvious for the reasons discussed above, and claim 21, as a dependent claim, does not have to independently stand on its own with respect to novelty.

Applicant has amended claim 18 herewith to incorporate the elements of claim 21 and has canceled claim 21 to avoid redundancy, rendering the Examiner's rejection of claim 21 moot.

With respect to claim 22, the Examiner has noted that "it would have been obvious to have modified the Zaleski process to have the carbon based material in 70-90 lb/bbl and the

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polymer about 2-10 lb/bbl through routine experimentation. Applicant respectfully submits that assuming *arguendo* the combination of polymer and carbon-based material were suggested, such experimentation to yield Applicant's specific synergistic combination would if at all only be "obvious to try" or to experiment, and "obvious to try" has long been viewed as an improper standard for obviousness. *Ecolchem, Inc. v. Southern California Edison Co.*, 227 F.3d 1361, 56 U.S.P.Q.2d 1065 (Fed. Cir. 2000). "Selective hindsight is no more applicable to the design of experiments than it is to the combination of prior art teachings." *In re Dow Chemical Co.*, 837 F.2d 469, 5 U.S.P.Q.2d 1529 (Fed. Cir. 1988). The Federal Circuit explained in *In re O'Farrell*, 853 F.2d 894, 7 U.S.P.Q.2d 1673 (Fed. Cir. 1988), that "Indeed, for many inventions that seem quite obvious, there is no absolute predictability of success until the invention is reduced to practice. There is always at least a possibility of unexpected results, that would then provide an objective basis for showing that the invention, although apparently obvious, was in law nonobvious."

With respect to claim 23, the Examiner has noted that while Zaleski fails to disclose whether the process is used in a vertical or horizontal or directional well, lost circulation is known to occur in horizontal or directional wells. Applicant respectfully traverses the Examiner's rejection because claim 23 depends from claim 18 which Applicant maintains is novel and unobvious for the reasons discussed above, and claim 23, as a dependent claim, does not have to independently stand on its own with respect to novelty.

With respect to claim 24, the Examiner has noted that while Zaleski fails to teach the temperature of the well, "Official Notice is taken that wells often have temperature of less than 200°F, and that such wells can experience lost circulation. Applicant respectfully traverses the Examiner's rejection because claim 24 depends from claim 18 which Applicant maintains is novel and unobvious for the reasons discussed above. Moreover, assuming *arguendo* that Applicant's invention were "obvious to try" at the claimed temperatures, the Examiner has failed to support his position that it would have been obvious to practice the Zaleski process in a well with temperatures less than 200°F. Obviousness to try has long been discredited as a standard for obviousness. *Ecolchem, Inc. v. Southern California Edison Co.*, 227 F.3d 1361, 56 U.S.P.Q.2d 1065 (Fed. Cir. 2000).

Applicant has incorporated the elements of claim 24 in amended claim 18 and has canceled claim 24 to avoid duplicity, rendering the Examiner's rejection of claim 24 moot.

With respect to claim 26, the Examiner has stated that "Zaleski teaches the additive used without bentonite or reinforcing materials," citing col. 9, line 22 "used alone" in Zaleski. Applicant respectfully traverses this position by the Examiner and respectfully submits that the Examiner has taken the phrase "used alone" out of context resulting in unfairness to Applicant. When "used alone" is read in context, Zaleski more specifically states:

A number of field tests were conducted in order to assess the efficacy of the graphitic carbon additive under actual conditions. In one test, resilient graphitic carbon was added to a lime-based drilling fluid and successfully prevented seepage loss and lost circulation in a deep hot well in South Louisiana. The material was used alone and in blends with fine mica, cellulose fiber or calcium carbonate, depending on the estimate of need as the well progressed to target depth. In all cases the material was compatible with other lost circulation or seepage loss products. (emphasis added).

Certainly Zaleski did not liken bentonite to "fine mica, cellulose fiber, or calcium carbonate" and Applicant respectfully submits that one skilled in the art would not liken bentonite to "fine mica, cellulose fiber, or calcium carbonate." It is error for the Examiner to attribute Applicant's teachings to prior art to reject Applicant's claims as "obvious."

The Examiner has rejected claim 20 [sic, but thought to mean claim 24] under 35 U.S.C. 103(a) as being unpatentable over Zaleski and DIAMOND SEAL™ as applied to claim 18 above and further in view of Christman (U.S. Patent No. 3,633,689). Specifically, the Examiner admits that Zaleski and DIAMOND SEAL™ fail to teach the alcohol, but the Examiner states that "Christman teaches the use of alcohol in drilling fluid, to prevent freezing in cold climates." The Examiner then concludes that "It would have been obvious to one of ordinary skill in the art at the time of the invention to have further modified the Zaleski process to have included alcohol, in order to prevent freezing."

Applicant respectfully traverses this rejection of the Examiner. Applicant teaches use of glyoxal in paragraph 18 (of Applicant's specification as published or paragraph 16 on page 6 as filed). "to facilitate the combination of the components." Applicant clearly states: "Moreover, the data shows the composition of the invention is effective at high temperatures, particularly temperatures typically encountered at intermediate wellbore depths of less than about 15,000 feet. Such intermediate depths are where most lost circulation typically occurs, if at all, during drilling for the recovery of hydrocarbons."

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Applicant has amended claim 18 to further indicate this purpose of the alcohol to facilitate the combination of the components, incorporating the elements of claim 24, and canceling claim 24 to avoid redundancy. Applicant does not use glyoxal or any other alcohol to prevent "freezing." Christman is directed to drilling fluids for operation in subfreezing environments and is not concerned with lost circulation materials. Christman is not applicable as a reference to Applicant's invention.

Applicant's prior claim 24, now incorporated in claim 18, is directed to temperatures less than about 200°F and one skilled in the art would know that the temperatures encountered at intermediate wellbore depths would not be near "freezing" as the Examiner suggests.

It is error for the Examiner to reconstruct Applicant's claimed invention from the prior art by using Applicant's claim as a "blueprint." *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 227 U.S.P.Q. 543 (Fed. Cir. 1985). The Federal Circuit has advised that when prior art references require selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight obtained from the invention itself. It is critical to understand the particular results achieved by the new invention. *Id.*

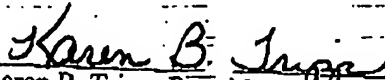
Applicant respectfully submits that the Examiner has presented no line of reasoning as to why an artisan reviewing only the collective teachings of the references cited by the Examiner would have found it obvious to selectively pick and choose various elements and/or concepts from the references relied on to arrive at the claimed invention. Applicant respectfully submits that the Examiner has shown that one or more elements is known but that such showing is insufficient to substantiate an obviousness rejection under 35 U.S.C. § 103. The claimed invention is directed to a combination of elements yielding unexpectedly superior results. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). None of the references teach increasing the effectiveness, efficiency or utility of using resilient carbon-based material in combination with a water swellable but not water-soluble crystalline synthetic polymer for treating lost circulation as taught by Applicant or in facilitating such combination with alcohol.

Applicant respectfully requests the Examiner reconsider his position and Applicant's claims, as amended. Applicant respectfully submits that this response is fully responsive to the Examiner's office action and Applicant respectfully requests the Examiner to allow the application to proceed to issue.

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Respectfully submitted,

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